

anticipated by U.S. Patent No. 6,147,668 to *Eglit*. Applicant respectfully traverses the rejection in contending that the claimed invention defines subject matter which is clearly patentably distinct over the *Eglit* patent.

The claimed invention as defined by claim 1 is directed to a method of driving a display device including, *inter alia*, steps of frequency modulating a reference clock signal and obtaining a modulated clock signal, sampling an image signal on the basis of the modulated clock signal, and supplying the sampled image signal to a corresponding pixel and obtaining an image. Practice of the method in accordance with claim 5 requires obtaining the modulated clock signal by randomly shifting a frequency of the reference clock signal.

It is respectfully contended that the *Eglit* patent fails to either expressly, implicitly or inherently teach every limitation of the claimed invention necessary to support a finding of anticipation under 35 U.S.C. §102. For instance, the Examiner finds that the *Eglit* patent teaches at column 7, lines 34-43 and Figure 4, “a method wherein the digital display unit (270) generates a sampling clock by modulating the intermediate clock signal by different amounts of phase delay for successive image frames in the display signal.” The Examiner interprets that this teaching reads on the claim limitation concerning frequency modulation.

It is contended that such an interpretation is incorrect since the *Eglit* patent at best teaches phase modulation, and not frequency modulation which is required in accordance with Applicant’s claimed method. For instance, the *Eglit* patent teaches that his device changes a phase modification value once every frame or every line and that the sampling point is generally different for successive frames for the same pixel position. Col. 9, lines 51-59.

On the other hand, the reference clock signal in accordance with claim 1 operates

at a constant frequency, and the modulated clock signal is a clock signal which shifts in frequency at a constant period, i.e., a signal which is modulated at a certain constant frequency. See, pages 20 and 21 of Applicant's specification. Hence, the *Eglit* patent teaches phase modulation whereas the claimed invention is directed to frequency modulation of a clock signal, and thus, is patentably distinct therefrom.

It is further contended that claim 5 is patentably distinct over the *Eglit* patent since it incorporates by reference the subject matter defined in claim 1. Meaning, since *Eglit* merely teaches phase modulation of a signal, it cannot teach obtaining a modulated clock signal by randomly shifting a frequency of the reference clock signal.

Accordingly, inasmuch as the method taught in *Eglit* fails to anticipate the claimed invention in accordance with claims 1 and 5, reconsideration and withdrawal of the rejection is earnestly solicited.

#### **B. 35 U.S.C. §103 Rejection**

The Examiner further rejects claims 2 and 3 under 35 U.S.C. 103(a) as unpatentable over the *Eglit* patent in view of U.S. Patent No. 5,359,342 to *Nakai et al.* (Hereinafter "*Nakai*"), claim 4 under 35 U.S.C. 103(a) as unpatentable over the *Eglit* patent in view of U.S. Patent No. 6,281,873 to *Oakley*, claims 6 and 7 under 35 U.S.C. 103(a) as unpatentable over the *Eglit* patent in view of U.S. Patent No. 4,713,688 to *Guttner al.*, claims 8-11 under 35 U.S.C. 103(a) as unpatentable over the *Eglit* patent, claims 12-15, 17 and 20-29 under 35 U.S.C. 103(a) as unpatentable over the *Eglit* patent in view of U.S. Patent No. 5,703,621 to *Martin et al.* (Hereinafter "*Martin*"), and claims 18 and 19 under 35 U.S.C. 103(a) as unpatentable over the *Eglit* patent in view the *Martin* and *Guttner* patents. Applicant respectfully traverses these rejections for at least the reasons solicited below.

Regarding the rejection of claims 2-4 and 6-11, in view of the above-noted response to the §102 rejection, in which it is contended that the *Eglit* patent clearly fails to teach frequency modulation of a clock signal, its proposed combination with any one of the *Nakai*, *Oakley* and *Guttner* patents is improper since each of the aforementioned secondary references fails to modify *Eglit* in a way that overcomes this deficiency. Accordingly, reconsideration and withdrawal of the rejections based upon these references is earnestly solicited.

As defined by claims 12 and 13, the claimed invention is directed generally to a display device comprising a source signal line-side driving circuit and a gate signal line-side driving circuit for driving an active matrix circuit, whereby a modulated clock signal obtained by frequency modulating a reference clock signal is inputted into the source signal line-side driving circuit. In accordance with claim 12, a fixed clock signal is inputted to the gate signal line-side driving circuit. In accordance with claim 13, a modulated clock signal which differs from the modulated clock signal inputted into the source signal line-side driving circuit in terms of quantity of frequency shifting or method of frequency modulation, is inputted into the gate signal line-side driving circuit.

It is respectfully contended that the *Eglit* patent, either alone or in combination with the *Martin* and/or *Guttner* patents, fails to expressly disclose or inherently suggest several claim limitations which are set forth in the claimed invention, and thus, the finding of *prima facie* obviousness is improper.

For instance, as previously noted, the base *Eglit* patent teaches phase modulation of a signal, and not the frequency modulation which is required in accordance with the claimed invention. Consequently, it is not possible for *Eglit* to teach inputting a modulated clock signal obtained by frequency modulating a reference clock signal into the source signal line-side driving circuit. Therefore, even if *Eglit* was combined with

*Martin* and/or *Guttner*, the claimed invention would not result.

Similarly, the proposed *Eglit* combination fails to teach, disclose or suggest a display device whereby a fixed clock signal is inputted to the gate signal line-side driving circuit, as defined by claim 12, or whereby a modulated clock signal which differs from the modulated clock signal inputted into the source signal line-side driving circuit in terms of quantity of frequency shifting or method of frequency modulation, is inputted into the gate signal line-side driving circuit, as defined by claim 13. The proposed combination further fails to disclose a passive matrix type display device as recited in claims 14 and 15.

It should be further noted that secondary considerations exist which further strengthen Applicant claim of patentability over the prior art of record, notably *Eglit*, *Martin* and *Guttner*. For instance, it is respectfully submitted that the claimed invention yields non-obvious benefits which are not recognized by *Eglit*, *Martin* or *Guttner*. More particularly, the claimed invention is directed to solving problems in viewing quality for conventional active matrix display devices. In modern times, active matrix display devices are replacing CRTs for use in personal computers and projectors since they do not have problems in terms of power consumption, volume and weight. Active matrix display devices, however, are characterized in having low horizontal resolution quality when compared to CRTs.

Accordingly, the present inventors have provided a method and apparatus which overcomes this deficiency supplying a source signal line driver circuit of a display device with a modified clock signal whereby the sampling of the video signal is conducted based upon the modified clock signal. In particular, modulation of the clock signal is done by frequency modulation. In this way, the resolution quality of the display device is enhanced since signal information (i.e., the presence or absence of an edge, the extent of

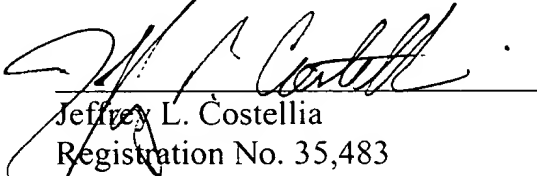
nearness) relative to the vicinity of the sampling of video signals (i.e., image signals) sampled on the basis of the modulated clock signal can be written to the corresponding pixels of the display device as shading information.

Inasmuch as the *Eglit* patent, in singular or in combination with the *Martin* and/or *Guttner* patents, fails to disclose several features of the claimed invention, such beneficial results cannot be achieved. Accordingly, reconsideration and withdrawal of the rejections based upon these references is earnestly solicited.

#### Conclusion

Accordingly, since the claimed invention clearly defines over the prior art of record, Applicant respectfully contends that the pending claims are in condition for allowance. Should the Examiner believe that anything further would be desirable to place this application in better condition for allowance, the Examiner is invited to contact Applicant's undersigned attorney at the telephone number listed below.

Respectfully submitted,  
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